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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,210	02/17/2004	Toshiaki Nakanishi	848075-0072	1941
29619 7590 09/25/2007 SCHULTE ROTH & ZABEL LLP ATTN: JOEL E. LUTZKER 919 THIRD AVENUE NEW YORK, NY 10022			EXAMINER TRINH, TAN H	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/781,210

Applicant(s)

NAKANISHI, TOSHIAKI

Examiner

TAN TRINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohno (U.S. Patent No. 6,522,898) in view of Akerberg (U.S. Patent No. 6,553,078).

Regarding claim 1, Kohno teaches a base station (see figs. 1-2, base station 32 and 33, col. 5, lines 2-8), which communicates with a radio terminal (see fig. 2, base station 32, communication with radio terminal N 1-3, col. 5, lines 2-33), comprising: an adaptive antenna (see fig. 2, antennas 41, col. 5, lines 35 - col. 6, lines 28); a receiving condition acquisition portion for acquiring a signal concerning a receiving condition of the radio terminal from the radio terminal (see fig. 2, communication request receiving section 55, and terminal identification section 56, and also see figs. 3, 4A-B and 5, col. 6, lines 28-47, col. 7, lines 31-col. 8, lines 43); and a directivity control portion for controlling the directivity of the adaptive antenna based on the acquired signal concerning the receiving condition of the radio terminal (see fig. 2, directivity controller 59, and fig. 4B for directivity control portion of signal D3 shows a directional pattern of the adaptive antenna on the base station, after a terminal station has been

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specified to be requesting terminal by the terminal, also see col. 3, lines 2-51, col. 6, lines 28-57, and col. 8, lines 5-54).

Still regarding claim 1, Kohno does not mention newly added limitation of “the receiving a quality of the reception”, and the adaptive antenna “in response to quality of reception” of the radio terminal. *Such teaching taught by Akerberg* (see figs. 1 and 5-6, see fig. 6, step S2 (Determine QD in MS), and S4 (report QD to BS), S5 (Store QD in BS), S6 (QD determines antenna switch), col. 1, lines 60-67, col. 3, lines 17-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Kohno with Akerberg, in order to determine the most recent quality “Qr” of the transmission channel used on the downlink when selecting one of the antennas for TDD transmission (see suggested by Akerberg on col. 3, lines 22-28).

Regarding claim 2, Kohno teaches wherein the directivity control portion sets the to be non-directional (see fig. 11A, when no terminal station with which connection is to be set up is specified, the controller 59 sets the directional pattern of the directivity control portion sets to omnidirectional directional pattern (non-directional) DF for S1-S8; see col. 13, lines 36-42), until a connection request is received from the radio terminal (see fig. 11B, when communication request occurs in the terminal station N3 sends a terminal identification signal and communication request signal to base station 32, col. 13, lines 43-46), and controls the directivity of the adaptive antenna based on the acquired signal concerning the receiving condition of the radio terminal after receiving the connection request from the radio terminal (see fig. 11B, directional pattern D3, when communication request signal to base station 32, upon receiving

these signals, base station start communication with the terminal station N3, and resets it transmitting/receiving directional pattern of adaptive antenna to the optimum directional pattern as indicated as directional pattern D3 in fig. 11B, see col. 13, lines 43-53).

Still regarding claim 2, Kohno does not mention newly added limitation of “the receiving a quality of the reception”, and the adaptive antenna “in response to quality of reception” of the radio terminal. *Such teaching taught by Akerberg* (see figs. 1 and 5-6, see fig. 6, step S2 (Determine QD in MS), and S4 (report QD to BS), S5 (Store QD in BS), S6 (QD determines antenna switch), col. 1, lines 60-67, col. 3, lines 17-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Kohno with Akerberg, in order to determine the most recent quality “Qr” of the transmission channel used on the downlink when selecting one of the antennas for TDD transmission (see suggested by Akerberg on col. 3, lines 22-28).

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirable (U.S. Pub. No. 2002/0177963) in view of Akerberg (U.S. Patent No. 6,553,078).

Regarding claim 3, Hirable teaches a base station (see fig. 1) which communicates with a radio terminal (see page 1, section [0002]) comprising: an adaptive antenna (see fig. 1 and 18, adaptive antennas 102 or 12, page 1, section [0004]), a receiving condition acquisition portion for acquiring a signal from the radio terminal concerning a quality of reception of the radio terminal from the radio terminal (see page 8-9, sections [000113-0115]). In this case, the acquisition portion for acquiring a signal on the downlink transmission directivity pattern is determined transmission power control signal onto downlink transmission power of each user

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can also be extracted from the signal with the interference is efficiently suppressed on the downlink channel for concerning a quality of the reception on the user of the radio terminal. But Hirable teaches does not mention the radio wave corresponding a signal concerning the good quality of reception among the acquired signals from the radio terminal. *Such teaching taught by Akerberg* (see figs. 1 and 5-6, see fig. 6, step S2 (Determine QD in MS), and S4 (report QD to BS), S5 (Store QD in BS), S6 (QD determines antenna switch), col. 1, lines 60-67, col. 3, lines 17-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Hirable with Akerberg, in order to determine the most recent quality "Qr" of the transmission channel used on the downlink when selecting one of the antennas for TDD transmission (see suggested by Akerberg on col. 3, lines 22-28).

Regarding claim 4, Hirable teaches a base station (see fig. 1) which communicates with a radio terminal (see page 1, section [0002]) comprising: an adaptive antenna (see fig. 1 and 18, adaptive antennas 102 or 12, page 1, section [0004]), a receiving condition acquisition portion for acquiring a signal from the radio terminal concerning a quality of reception of the radio terminal from the radio terminal (see page 8-9, sections [000113-0115]). In this case, the acquisition portion for acquiring a signal on the downlink transmission directivity pattern is determined transmission power control signal onto downlink transmission power of each user can also be extracted from the signal with the interference is efficiently suppressed on the downlink channel for concerning a quality of the reception on the user of the radio terminal.

Hirable also teaches the directivity control portion for controlling the directivity of the adaptive antenna at the transmission direction of the radio wave corresponding to good data rate control (see page 4-5, sections [0055 and [0057-0062]). But Hirable teaches does not mention the radio wave corresponding a signal concerning the good quality of reception among the acquired signals from the radio terminal. *Such teaching taught by Akerberg* (see figs. 1 and 5-6, see fig. 6, step S2 (Determine QD in MS), and S4 (report QD to BS), S5 (Store QD in BS), S6 (QD determines antenna switch), col. 1, lines 60-67, col. 3, lines 17-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Hirable with Akerberg, in order to determine the most recent quality “Qr” of the transmission channel used on the downlink when selecting one of the antennas for TDD transmission (see suggested by Akerberg on col. 3, lines 22-28).

Conclusion

5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is (703) 306-0377.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
September 16, 2007

PATENT EXAMINER
TRINH, TAN

